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ABSTRACT

Judgment is the process of making decisions with incomplete information concerning either the outcomes or the decision factors. Sound judgment that leads to good decisions is an essential skill needed by adventure education and outdoor leadership professionals. Cognitive psychology provides several theories and insights concerning the accuracy of human judgment. Selective perceptions refers to the fact that perceptions are selective, reconstructive, and subject to memory biases. The context in which one encounters a situation affects the way it is perceived, and therefore will affect judgments and decisions. There are three such context effects: the primacy effect, the recency effect, and the halo effect. General rules to help find solutions are known as "heuristics." Although generally helpful, heuristics can be obstructive by creating predictable biases. Two impediments unique to group decision-making are "groupthink" and "social loafing." Three main types of common traps in decision making are overconfidence, self-fulfilling prophecies, and behavioral traps. The five types of behavioral traps discussed are the time delay trap, ignorance trap, investment trap, deterioration trap, and collective trap. Strategies to mitigate each of these phenomena are given. (TD)

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The Psychology of Judgment for Outdoor Leaders

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There are a great many competencies that an outdoor leader must master before he or she may claim to be proficient in the trade. None may be as important as the ability to form good quality decisions based on sound judgment. Much research in the field of Cognitive and Social Psychology over the past one hundred years has focused on how decision-makers form the bases for their decisions. Outdoor leaders may gain many insights from studying the work of cognitive psychologists. In this article, the reader will find information from many different studies from different disciplines mostly compiled by Scott Plous (1993). Some of the studies represented in this article conflict in their findings, all will give insight into how outdoor leaders may improve their judgment and decision-making abilities.

Judgment is the process of making decisions with incomplete information concerning either the outcomes or the decision factors such as what the clouds look like on the other side of the mountain. For the most part, humans are relatively good at observing and learning from past judgments and their outcomes- IF the differences between the costs and the benefits are clear. When ambiguity and uncertainty are present or other confounding variables such as desire or ego, the accuracy of human judgment plummets. There are several theories in cognitive psychology that help to explain this phenomenon. These theories range from the "evolutionary approach" (a theory stemming from anthropology) to social judgment theories (stemming from cognitive and social psychology) such as "group-think".

According to the evolutionary approach, humans reason most poorly when faced with problems that their evolutionary predecessors never encountered. For example, Watson (1982) wanted to test the ability of subjects to verify a rule. He gave subjects a rule, such as "if a card has A on one side, it must have a 4 on the other" (a simple "if p, then q" test). Subjects were then asked to turn over the appropriate cards in order to determine if the rule had been violated. The four cards contained cases corresponding to ``p'', ``not p'', ``q'', and ``not q'' (A, C, 4, and 6, respectively). Logic dictates that the rule is violated when ``p'' is true but ``q'' is false. The subjects had only to turn over the card corresponding to p (in this case A) and not q (in this case 6) to verify the rule. Surprisingly, subjects in this study and other similar studies were able to give the correct solution at best 25% of the time. Recently, researchers have used the evolutionary approach to explain the lack of this type of problem solving ability in humans. Barkow, Cosmides and Tooby (1992) theorized that if the dilemma was structured to fit questions that human ancestors must have faced, like identifying social cheaters, modern humans would be able to perform better at a Watson-like test requiring the same "if p, then q" logic. Cosmides and Tooby used scenarios centered in determining whether a social contract is being violated such as "the chief of the tribe says that if you get a tattoo on your face, he will give you a casaba root" and other scenarios of a more arbitrary nature such as "if you eat duckier meat, then you have found an ostrich eggshell" (Bower, 1994). They found that when the test contained a possible violation of a social contract, many more of the subjects were able to solve it (up to 75%)

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as opposed to the more arbitrary test (only 25%). They found this to be true even if the social contract situation occurs in an unfamiliar setting.

Many decisions faced by the outdoor leader are undoubtedly outside the realm of decisions with which humanity's ancestors were forced to contend. Consider the complexity of the decisions a lead rock climber must make each time a piece of protection is placed. These decisions involve the physics of falling objects, the stability of the rock, his or her own mental condition and those of his or her companions, etc. So, outdoor leaders, like many other professional decision-makers, may, from the beginning, be at a disadvantage. People in general may lack the necessary cognitive mechanisms to efficiently solve the myriad of complex social and technical dilemmas they face daily in their jobs. Beginning at such a disadvantage, all decision-makers could use a little help. In the following sections the reader will find various problems and biases identified by researchers seeking to understand human judgment and decision-making. Also included are some solutions and self-checks which the outdoor leader may find useful in overcoming problems with making good-quality judgments.

Selective Perceptions

The way in which the environment is perceived strongly influences the way leadership situations are perceived. It can therefore be said that the environment directly affects actions taken by the decision maker. Furthermore, as researchers Bruner and Postman explain, "Perceptual organization is powerfully determined by expectations built upon past commerce with the environment." (1949; p. 222) As the decision maker advances through a series of situations within different environments, decisions are made. Each decision made with incomplete facts and ambiguity of information is formulated using judgment.

Each decision that is made in response to a unique situation and that is remembered comprises the decision maker's repertory of past decisions. These past decisions collectively form a knowledge base drawn upon for not only information but also for correlation with the situation at hand. The more the present situation parallels a remembered past situation, the more the decision maker relies upon his or her recollection of the decision's success or failure. Within one's memory, the actual success or failure of a decision tends to become clouded and may change depending on many cognitive factors. Memory is considered to be reconstructive and, therefore, susceptible to bias.

Bruner and Postman in 1949 constructed an experiment designed to investigate selective perceptions. They showed subjects playing cards for a very short time. Some of the cards were "trick" cards like a black three of hearts. The responses of the subjects fit into four basic categories: Dominance: subjects reacted by fitting their perceptions into their existing experience (believing they only saw normal cards). Compromise: subjects make up explanations to suit them (like a black three of hearts looked purple). Disruption: subjects became very confused and were not even sure of exactly what they had been looking. Recognition: Some of the subjects were able to identify the non-traditional cards, but they were in the minority and it generally took them 4 times as long to identify trick cards. Many subsequent studies have shown similar results. Another illustration is to think about a pleasant situation in which the reader has recently been. Take some time and try it. Most folks will, in their mind's eye, see themselves performing the activity. Unless the

reader was looking in a mirror at the time the activity was being performed, then the scene was reconstructed in the reader's mind. The bottom line is that perceptions are selective, reconstructive, and subject to memory biases. It is therefore important to keep accurate notes about events that are observed. Another way to reduce the prevalence of selective memory and perceptions is to ask one's self several questions when making a decision or judgment.

1. Am I motivated to see things a certain way?

2. What expectations did I bring into the situation?

3. Would I see things differently without these motivations and expectations?

4. Have I consulted others who do not share my expectations and motives? (Plous, 1993: p. 21).

Context effects

The context in which one encounters a situation affects the way it is perceived and therefore will affect judgments and decisions. There are three noteworthy context effects: a) The Primacy effect- the first attribute of the subject or situation being considered is the one that makes the greatest impact on the decision maker, b) The Recency effect- the last attribute of the subject or situation being considered is the one that makes the greatest impact on the decision maker, and c) The Halo effect- once an attribute is attached to a person or a situation, other perceptions are colored by this attribute.

The important point here is that a decision maker does not necessarily attach equal weight to attributes observed in different contexts. Context effects are relatively easily overcome by:

5. Trying to maintain a 3rd person perspective by stepping back and observing a situation like you were watching the scene from a movie theater

6. Keeping accurate records

7. Asking others (especially those with differing views) for their opinions.

Heuristics and the biases they create

There are many heuristics (using general rules to help find solutions or answers) which help humans operate in a complex environment by simplifying decision-making. Decisions made from the use of heuristics often approximate the optimal answers suggested by normative models (Plous, 1993). However, heuristics can get in the way by creating predictable biases when decisions require more of an in-depth examination of the facts. One of the heuristics that is susceptible to bias is called the "availability heuristic." The availability heuristic indicates that an event which is easily imaginable in one's mind may seem more likely than another event that is more difficult to imagine. Further, the inability to imagine an event may make that event seem

less likely than another event even though both events could have the same probability. To help mitigate the influences of the availability heuristic researchers suggest these points:

8. Get to know the rates of events and link them with activities. This way there is no guess work as to the chance of occurrence.

9. Be aware of wishful thinking. The probability of desirable events is usually overestimated and the probability of undesirable events is often underestimated.

10. Break compound events into simple events and look at the probabilities individually.

Judgments Involving Groups

Groups can display many of the susceptibilities to biases that individual decision makers do, however, they are often able to make better decisions than individuals, especially if there are varying opinions within the group. It has also been shown that an exceptional decision maker can out-perform the decision-making ability of a group. There are some impediments to decision-making unique to groups. One of the most interesting and potentially devastating to an outdoor leadership team is called "Groupthink". Groupthink is a term coined by Irving Janis (1982) and "refers to a deterioration of mental efficiency, reality testing, and moral judgment that results from in-group pressures" (p.9). Groupthink is cited as being one of the main contributors to monumentally poor decisions such as the "Bay of Pigs" and the Challenger disaster. Janis and others give several methods to protect groups from falling prey to Groupthink:

11. Leaders should encourage dissenting opinions

12. The main leader should express opinions last in the group.

13. Whenever possible, split the group and work on the decision in parallel and compare answers.

14. Designate someone to play the "Devil's Advocate" and oppose any line of reasoning the group is pursuing.

Social loafing- (Lantane, Williams and Harkins, 1979) is another phenomenon that may have implications to the outdoor leader. Persons who work in groups do not work as hard as they do when they work alone. In an experiment reported by Moede (1927) involving how hard persons pulled on a rope, those who worked in a group of two pulled 93 percent as hard as they did when they were alone. Persons who worked in a group of three pulled 83 percent as hard as they did when they were alone. And, persons working in a group of eight pulled only 49 percent as hard as they did when they were working alone. The implications to the outdoor leader are obvious. One way to mitigate the detrimental effects of this phenomenon is to:

15. Make people aware of the tendency to loaf in a social situation. Cohesive groups of friends showed less social loafing than did groups of strangers.

Common Traps in Decision-making

Common traps refer to problems in judgment that are almost ubiquitous to human decision-makers. Three main types of common traps will be discussed: Overconfidence; Self-fulfilling Prophecies; and Behavioral Traps.

1) Overconfidence: Confidence levels usually exceed accuracy by 10 to 20 percent, unless the decision maker is extremely confident of his or her answer, then confidence exceeds accuracy by a higher percentage (Paese and Sniezek, 1991). To correct this problem one can calibrate one's judgments by these methods:

16. If you are very sure (90% range) then consider the probability that you are actually correct in your assumption as being in the 70 to 75 percent range. (Plous, 1993)

17. Consider why a different answer may be correct as well. Even though it may not change your mind, it may help to recalibrate your judgments.

2) Self fulfilling prophecies- People tend to seek responses and place higher importance on observations that confirm their beliefs. It can often be as informative, if not more informative, to find disconfirming data. To counter this common trap some research suggests that simply by:

18. Be aware of the tendency to seek only confirming observations. Decision-makers should seek a balanced mix of both confirming and disconfirming observations.

3) Behavioral traps- Behavioral ``Countertraps (sins of omission) arise when we avoid potentially beneficial behavior, while (behavioral) traps (sins of commission) occur when we take potentially harmful courses of action" (Cross and Guyer, 1980, p. 18). Researchers Cross and Guyer published a taxonomy of behavioral traps which will probably sound familiar to the reader since many of them may be witnessed in every-day life, as well as on outdoor expeditions. They are:

1. **Time delay trap** -- short term consequences run counter to long term consequences e.g. ignoring social problems within the group which may lead to group non-cohesion versus dealing with the problem when it occurs, or the convenience of disposable products versus the long term consequences of environmental degradation.

2. **Ignorance trap** -- Negative consequences are not known or understood or foreseen at the outset due to lack of preparedness.

3. **Investment trap** -- Investment of or prior expenditures of time, money, effort or other resources lead people to make choices they would not otherwise make e.g. the time and effort put into the approach of a peak influencing the decision to go forward in the face of uncertain weather. Another term for this trap is the sunk-cost effect.

4. **Deterioration trap** -- (sliding reinforcer trap) similar to investment trap except that it changes over time like a heroin addiction. E.g.

After a while a base jumping adrenaline addict takes more and more chances in order to keep from feeling the symptoms of withdrawal as much as he or she does to feel the euphoria of the activity.

5. **Collective trap** -- The pursuit of individual self-interest results in adverse consequences for the collective. For outdoor leaders, this trap may also be viewed as the antithesis of the well-known criterion of good leadership, selflessness. A leader would seem selfish if he or she wanted to proceed with an activity without due regard to the needs or desires of the rest of the group.

This set of behavioral traps may be the most important of all of the preceding judgment and decision-making stumbling blocks for outdoor leaders. Some researchers even claim that cognitive traps represent "all of our most intractable and large-scale urban, national, and international problems today" (Platt, 1973). They exemplify the problems and shortcomings associated with quality judgment and decision-making in outdoor leaders and other professional decision-makers. As for hints to help avoid cognitive traps, there are few. On the other hand, some have successfully used cognitive traps to their advantage. Scott Plous (1993, page 252) explains that many individuals who are attempting to accomplish difficult self-imposed tasks such as dieting, quitting smoking, and quitting drinking often do so by, "intentionally trapping themselves in healthful patterns of living." Plous goes on to give four tips if entrapment is desired. Here they are changed so that they indicate what to do when entrapment is not desired. Decision-makers should:

19. Seek information about the costs of entrapment

20. Always set limits or evaluating the costs of entrapment

21. Make a public declaration of commitment to refrain from becoming entrapped

22. Avoid competition with other people who are striving toward the same goal (Plous, 1993; p. 252)

Conclusion

Trained leaders who possess the ability to consistently make decisions that have a high percentage of success comprise the most successful and proficient leaders. Good judgment that leads to good decisions is an essential component of the skills needed by adventure education and outdoor leadership professionals. If it is true that human decision-makers lack some of the essential cognitive mechanisms needed to deal with the many hundreds of decisions required of him or her daily, any insight that would aid in making better decisions would surely be welcomed. In this paper, the authors have presented only a first glimpse of some of the literature on judgment and decision-making that is available to the outdoor leader.

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